

IN THE CLAIMS:

1 1-28. (Cancelled).

1 29. (Previously Presented) A method for accessing a data storage system, comprising:

2 receiving a login request from a first specific client, the login request directed to
3 the data storage system;

4 generating, in response to the login request, a first logical unit number map (lun
5 map) for the specific client by determining one or more physical logical unit numbers
6 (PLUNs) of the data storage system that the first specific client has permission to access
7 and then mapping one or more client specific virtual logical unit numbers (VLUNs) of
8 the first specific client to the one or more PLUNs, in the first lun map;

9 exporting the client specific VLUNs to the first specific client; and

10 receiving a data access request command from the first specific client, the request
11 directed to a selected client specific VLUN in the first lun map, and translating the client
12 specific VLUN into a selected PLUN utilizing the first lun map, and performing the data
13 access request command on the selected PLUN associated with the data storage system.

1 30. (Previously Presented) The method of claim 29, further comprising:

2 generating the first lun map to have a set of ordered pairs mapping the one or
3 more client specific VLUNs to one or more PLUNs.

1 31. (Cancelled).

1 32. (Previously Presented) The method of claim 29, further comprising:
2 identifying the one or more PLUNs that the client may access in response to the
3 client logging in by,
4 (a) selecting a lun data structure;
5 (b) searching through a list of client identifiers in the lun data structure to identify
6 whether the client may access the one or more PLUNs;
7 repeating steps (a) and (b) for each lun data object associated with a given storage
8 system; and
9 accessing, in response to a client data access request, a lun data object by use of
10 the first lun map and without searching the lun data structure.

1 33. (Previously Presented) The method of claim 29, further comprising:
2 accessing a set of lun data structures associated with the storage system in
3 identifying the one or more PLUNs which the client has permission to access.

1 34. (Previously Presented) The method of claim 32, further comprising:
2 using a world wide name as the client identifier.

1 35. (Previously Presented) The method of claim 29, further comprising:
2 using a Fibre Channel switching network for the first specific client to access the
3 data storage system.

1 36. (Previously Presented) The method of claim 29, further comprising:

2 using an Ethernet switching network for the first specific client to access the data
3 storage system.

1 37. (Previously Presented) The method of claim 29, further comprising:
2 using a multi-protocol storage appliance as the data storage system.

1 38. (Previously Presented) The method of claim 29, further comprising:
2 exporting the client specific VLUNs to the client as a set of accessible luns.

1 39. (Previously Presented) The method of claim 29, further comprising:
2 containing the first lun map within an initiator data structure.

1 40. (Currently Amended) A data storage system, comprising:
2 a login request received from a ~~the~~ specific client, the login request directed to the
3 data storage system;
4 a logical unit number map (lun map) generated, in response to the login request,
5 the lun map mapping one or more client specific virtual logical unit numbers (VLUNs) to
6 one or more physical logical unit numbers (PLUNs) of the data storage system that the
7 first specific client has permission to access;
8 the client specific VLUNs exported to the client; and
9 a data access request command received from the specific client, the request
10 directed to a client specific VLUN in the lun map, translating the client specific VLUN

11 by the map into a selected PLUN, and performing the data access request command on
12 the selected PLUN associated with the data storage system.

1 41. (Previously Presented) The data storage system of claim 40, further comprising:
2 the lun map having a set of ordered pairs mapping the one or more client specific
3 VLUNs to the one or more PLUNs.

1 42. (Cancelled).

1 43. (Previously Presented) The data storage system of claim 40, further comprising:
2 one or more PLUNs that the specific client may access identified in response to
3 the specific client logging in by,
4 (a) selecting a lun data structure;
5 (b) searching through a list of client identifiers in the lun data structure to identify
6 whether the specific client may access the one or more PLUNs;
7 repeating steps (a) and (b) for each lun data object associated with a given storage
8 system; and
9 a client data access request to access a lun data object by use of the lun map and
10 without searching the lun data structure.

1 44. (Previously Presented) The data storage system of claim 40, further comprising:
2 a set of lun data structures associated with the storage system accessed in
3 identifying the one or more PLUNs which the specific client has permission to access.

1 45. (Previously Presented) The data storage system of claim 43, further comprising:
2 a world wide name used as the client identifier.

1 46. (Previously Presented) The data storage system of claim 40, further comprising:
2 a Fibre Channel switching network used for the specific client to access the data
3 storage system.

1 47. (Previously Presented) The data storage system of claim 40, further comprising:
2 an Ethernet switching network used for the specific client to access the data
3 storage system.

1 48. (Previously Presented) The data storage system of claim 40, further comprising:
2 a multi-protocol storage appliance used as the data storage system.

1 49. (Previously Presented) The data storage system of claim 40, further comprising:
2 the one or more client specific VLUNs exported to the client as a set of accessible
3 luns.

1 50. (Previously Presented) The data storage system of claim 40, further comprising:
2 the lun map contained within an initiator data structure.

1 51. (Previously Presented) A computer readable storage medium, comprising:

2 a processor executing instructions for accessing a data storage system, the data
3 storage system having the steps of,
4 receiving a login request from the specific client, the login request directed to the
5 data storage system;
6 generating, in response to the login request, a logical unit number map (lun map)
7 for the specific client by determining one or more physical logical unit numbers (PLUNs)
8 of the storage system that the first specific client has permission to access and then
9 mapping one or more client specific virtual logical unit numbers (VLUNs) to the one or
10 more PLUNs;
11 exporting the client specific VLUNs to the client; and
12 receiving a data access request command from the client, the request directed to a
13 client specific VLUN, translating the client specific VLUN by the lun map into a selected
14 PLUN utilizing the lun map, and performing the data access request command on the
15 selected PLUN.

1 52. (Previously Presented) A method for accessing a data storage system, comprising:
2 logging into the data storage system by a client;
3 generating, in response to the client logging into the data storage system, a logical
4 unit number map (lun map) for one or more physical logical units (PLUNs) the client is
5 permitted to access, the lun map excluding mapping of PLUNs the client is not permitted
6 to access, the lun map mapping virtual logical numbers (VLUNs) to the one or more
7 PLUNs;
8 exporting the VLUNs to the client; and

9 receiving a data access request command from the client for data on a specific
10 VLUN mapped by the lun map, the request directed to a client specific VLUN,
11 translating the client specific VLUN by the lun map into a selected PLUN utilizing the
12 lun map, and
13 performing, by the data storage system, the data access request on the PLUN
14 mapped by the lun map to the specific VLUN.

1 53. (Previously Presented) The method of claim 52, further comprising:
2 accessing the PLUNs supporting a client specific virtual logical unit number
3 (VLUN).

1 54. (Previously Presented) The method of claim 52, further comprising:
2 identifying the one or more PLUNs that the client may access in response to the
3 client logging in by,
4 (a) selecting a lun data structure;
5 (b) searching through a list of client identifiers in the lun data structure to identify
6 whether the client may access the one or more PLUNs;
7 repeating steps (a) and (b) for each lun data object associated with a given storage
8 system; and
9 accessing, in response to a client data access request, a lun data object by use of
10 the lun map and without searching the lun data structure.

1 55. (Previously Presented) The method of claim 53, further comprising:

2 accessing a set of lun data structures associated with the storage system in
3 identifying the one or more PLUNs which the client has permission to access.

1 56. (Previously Presented) The method of claim 53, further comprising:
2 containing the lun map within an initiator data structure.

1 57. (Previously Presented) An apparatus to access a data storage system, comprising:
2 a client configured to log into the data storage system;
3 in response to the client logging into the data storage system, a client specific
4 logical unit number map (lun map) configured to be generated for one or more physical
5 logical units (PLUNs) the client is permitted to access, the lun map further configured to
6 exclude mapping of PLUNs the client is not permitted to access, the lun map mapping
7 virtual logical numbers (VLUNs) to the one or more PLUNs;
8 the VLUNs further configured to be exported to the client;
9 the client further configured to send a data access request for data on a specific
10 VLUN mapped by the lun map;
11 receiving a data access request command from the client or data on a specific
12 VLUN mapped by the lun map, the request directed to a client specific VLUN,
13 translating the client specific VLUN by the lun map into a selected PLUN utilizing the
14 lun map, and
15 the data storage system configured to perform the data access request on the
16 PLUN mapped by the lun map to the specific VLUN.

1 58. (Currently Amended) The system of claim 57, further comprising:
2 the specific PLUN configured to access a the physical logical unit.

1 59. (Previously Presented) The system of claim 57, further comprising:
2 (a) a lun data structure selected in response to the login by the client;
3 (b) a storage system to search through a list of client identifiers in the lun data
4 structure to identify whether the client may access a selected PLUN, the storage system
5 to repeat steps (a) and (b) for each lun data object associated with a given storage system;
6 and
7 a lun data object, associated with the selected PLUN, accessed by use of the lun
8 map and without a search of the lun data structure.

1 60. (Previously Presented) The system of claim 57, further configured to access a set of
2 lun data structures associated with the storage system by identifying the one or more
3 PLUNS which the client has permission to access.

1 61. (Previously Presented) The system of claim 57, further comprising:
2 the lun map configured within an initiator data structure.

1 62. (Currently Amended) A computer readable storage medium, comprising:
2 a processor executing instructions for the practice of a method of accessing a
3 data storage system, the method having the steps of,
4 logging into the data storage system by a client;
5 generating a client specific logical unit number map (lun map), in response to
6 the client logging into the data storage system, for one or more physical logical units

7 (PLUNs) the client is permitted to access, the lun map excluding mapping of PLUNs
8 the client is not permitted to access, the lun map mapping virtual logical unit numbers
9 (VLUNs) to the one or more PLUNs;
10 exporting the VLUNs to the client;
11 receiving a data access request command from the client for data on a specific
12 VLUN mapped by the lun map, the request directed to a client specific VLUN,
13 translating the client specific VLUN by the lun map into a selected PLUN utilizing
14 the lun map, and
15 performing by the data storage system the data access request on the selected
16 PLUN mapped by the lun map to the specific VLUN.